AMENDMENTS TO THE CLAIMS

Please add or amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims indicated as cancelled:

Claims 1 and 2 cancelled.

3 (Currently amended). A method ~~according to claim 1, wherein~~ comprising:

estimating a first value of a parameter for canceling an in-phase/quadrature phase mismatch of an in-phase/quadrature phase ~~comprises estimating at least one parameter, respectively~~ modulator; and

estimating a second value of the parameter for canceling an in-phase/quadrature phase mismatch of an in-phase/quadrature phase ~~the IQ~~ demodulator.

4 (Currently amended). A method according to claim ~~1~~ 3, ~~wherein passing the values through the IQ modulator and the IQ demodulator comprises~~ comprising:

passing the first values through the ~~IQ~~ in-phase and quadrature phase modulator in ~~the~~ a processing path of a communication device and passing the second value through ~~an IQ~~ the in-phase/quadrature phase demodulator in a reverse path of the communication device.

Claims 5 and 6 canceled.

7 (Currently Amended). A method according to claim ~~1~~ 3, comprising:

~~wherein~~ estimating the first and second values of ~~at least one~~ the parameter ~~comprises~~ by accumulating a predetermined number of pairs of provided values and respective distorted values and estimating said first and second values from the accumulated pairs.

8 (Original). A method according to claim 7, wherein ~~the communication device comprises a transmitter and~~ accumulating a predetermined number of pairs comprises accumulating a number of pairs transmitted during a single transmission slot.

9 (Currently Amended). A method according to claim ~~13~~ 3, comprising: ~~wherein passing the values through elements to produce distorted values comprises~~

passing ~~also~~ values for processing through ~~at least one~~ a multiplier which performs ~~IQ~~ an in-phase/quadrature phase mismatch cancellation based on current values of ~~the at least one~~ an estimated parameter ~~which is to be estimated~~.

10 (Currently Amended). A method according to claim 9, wherein estimating the ~~at least one~~ parameter comprises determining a next step correction of the current value of the ~~at least one~~ estimated parameter.

Ref. Cont.

11 (Currently Amended). A method according to claim ~~1~~ 7, comprising repeating the estimating of the ~~at least one~~ parameter a predetermined number of repetitions.

12. (Currently Amended). A method according to claim ~~1~~ 7, comprising retrieving ~~from storage~~ initial values of the ~~at least one~~ parameter.

13 (Currently Amended). A method according to claim ~~1~~ 7, comprising storing ~~the~~ an estimated value of the ~~at least one~~ parameter for later use.

14 (Currently Amended). A method according to claim ~~1~~ 3, ~~wherein providing the values to the processing path comprises~~ comprising providing values generated for the ~~IQ~~ in-phase and quadrature phase mismatch cancellation method to a processing path.

15 (Currently Amended). A method according to claim ~~1~~ 14, wherein providing the values to the processing path comprises providing values generated without relation to the ~~IQ~~ in-phase and quadrature phase mismatch cancellation method.

16 (Currently Amended). A method according to claim ~~1~~ 14, comprising: ~~wherein passing the provided values through the at least one non-linear element comprises~~ passing the values through ~~at least one~~ a non-linear element ~~which has a gain which depends on the magnitude of its input signal~~.

17 (Currently Amended). A method ~~of assigning values to parameters for IQ mismatch cancellation,~~ comprising:

estimating a complex-valued base band equivalent gain of an amplification unit of a communication device;

approximating values of ~~one or more~~ a matrices representing an ~~IQ~~ in-phase and quadrature phase mismatch effect of the communication device based on ~~current values of at least one~~ an in-phase and quadrature phase mismatch cancellation parameter ~~for of the IQ effect~~; and

selecting a ~~next step~~ value of the ~~at least one~~ in-phase/quadrature phase mismatch cancellation parameter ~~for cancellation of the IQ mismatch effect, which next step values~~ to minimize a cost function which depends on ~~values passed through the communication device and depends on~~ the estimated complex-valued base band equivalent gain and the approximated ~~one or more~~ matrices.

18 (Original). A method according to claim 17, wherein estimating the complex valued gain comprises estimating separately for each value passed through the communication device.

19 (Original). A method according to claim 17, wherein estimating the complex valued gain comprises estimating once for a plurality of accumulated values passed through the communication device.

20 (Currently Amended). A ~~trainer for an IQ mismatch cancellation unit of a~~ communication device ~~including at least an IQ modulator and an IQ demodulator along a sequential path,~~ comprising:

~~a first input adapted to receive values from before an entrance to the first of the IQ modulator and the IQ demodulator along the sequential path;~~

~~a second input adapted to receive values from after an output of the last of the IQ modulator and the IQ demodulator along the sequential path; and~~

a trainer to provide ~~an a determination unit adapted to determine at least one~~ an in-phase/quadrature phase mismatch cancellation parameter ~~of the cancellation unit~~

responsive to values received from ~~on~~ both an input and an output of an in-phase/quadrature phase modulator and from an input and an output of an in-phase/quadrature phase demodulator to an in-phase/quadrature phase cancellation unit. ~~the first and second inputs~~.

21 (Currently Amended). A communication device ~~trainer~~ according to claim 20, wherein the trainer does not have inputs from any point between the ~~IQ~~ in-phase/quadrature phase modulator and the ~~IQ~~ in-phase/quadrature phase demodulator.

22 (Currently Amended). A ~~trainer~~ communication device according to claim 20~~, wherein the sequential path includes~~ comprising a non-linear element between the IQ modulator and the IQ demodulator.

23 (Currently Amended). A ~~trainer~~ communication device according to claim 20, wherein the trainer comprises:

a determination unit ~~is adapted~~ to determine a ~~corrected~~ value of the ~~at least one~~ in-phase/quadrature phase mismatch parameter which minimizes a cost function based on values received from both ~~the first and second inputs~~ the in-phase/quadrature phase modulator and the in-phase/quadrature phase demodulator.

24 (Currently Amended). A ~~trainer~~ communication device according to claim ~~20~~ 23, comprising:

two or more cancellation units wherein the determination unit is adapted to determine ~~at least one~~ the in-phase/quadrature phase mismatch parameter ~~for each of at least~~ of the two or more cancellation units.

25 (Currently Amended). A ~~trainer~~ communication device according to claim ~~20~~ 23, wherein the determination unit is adapted to determine the ~~at least one~~ in-phase/quadrature phase mismatch parameter iteratively.

Claims 26-30 cancelled.

31 (Currently Amended). A transmitter comprising: ~~according to claim 29, wherein the~~ a mismatch trainer to adjust a value of a mismatch parameter;

a feedback conversion unit ~~comprises~~ having a demodulator and a mismatch multiplier of the demodulator and the mismatch trainer is adapted to adjust parameters of the mismatch multiplier of the demodulator.

32 (Currently Amended). A transmitter according to claim ~~29~~ 31, comprising:

mismatch adjustment circuitry adapted to adjust signals entering an in-phase/quadrature phase modulator in order to cancel mismatch effects of the modulator and wherein the mismatch adjustment circuitry ~~comprises~~ includes a matrix multiplier.

33 (Currently Amended). A transmitter according to claim ~~29~~ 31, wherein the mismatch trainer is adapted to adjust ~~the at least one~~ the mismatch parameter ~~of the mismatch adjustment circuitry~~ iteratively.

34 (Currently Amended). A transmitter according to claim ~~29~~ 31, comprising a processor which includes ~~the~~ a predistorter, ~~the~~ a predistorter trainer, ~~the~~ mismatch adjustment circuitry and the mismatch trainer.

35 (Original). A method of assigning values to parameters for IQ mismatch cancellation of a transmitter, comprising:

~~transmitting values by the transmitter;~~

estimating at least one parameter for cancellation of IQ mismatch effects of the transmitter responsive to the values transmitted during a first period; and

adjusting the at least one parameter estimated responsive to the values transmitted during a first period responsive to values transmitted during a second period, which second period is separated from the first period by a rest period in which the transmitted values are not used to adjust parameters for IQ mismatch cancellation.

36 (Original). A method according to claim 35, wherein the values transmitted during the rest period are used for adjusting a predistorter of the transmitter.

Cont.

37 (Original). A method according to claim 36, comprising adjusting the predistorter based on values transmitted before the first period.